



## High Exposure Swirl Diffusers VDL



Cooling



Heating

### DESCRIPTION:

Ceiling swirl diffusers in air conditioning systems create a swirl to supply air to rooms. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. Ceiling swirl diffusers allow for large volume flow rates. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone

VDL : Adjustable Blade (6-12 Blades)

VDL-S: Fixed Blade (12 Blades)

### MATERIAL :

Galvanized sheet metal

### FUNCTION :

Type VDL ceiling swirl diffusers have adjustable air control blades. Different air patterns allow for cooling or heating mode, or for the adjustment to varying loads. Horizontal air discharge is omni directional. Vertical air discharge is possible in heating mode.

The supply air to room air temperature difference may range from -12 to +15 K.

- Nominal sizes 315, 400, 630, 800
- Volume flow rate range 65 – 1080 l/s or 234 – 3888 m

### FINISHING :

- Powder coated in RAL9010 colour as standard. Other colours on request

### INSTALLATION :

- Screw
- No Fixing

### ACCESSORIES:

- Plenum box

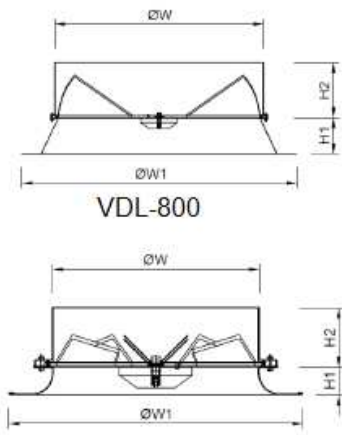


**STANDARD SIZES (mm):**

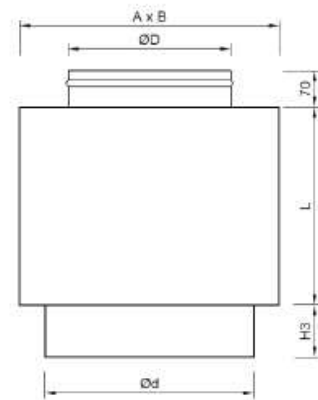
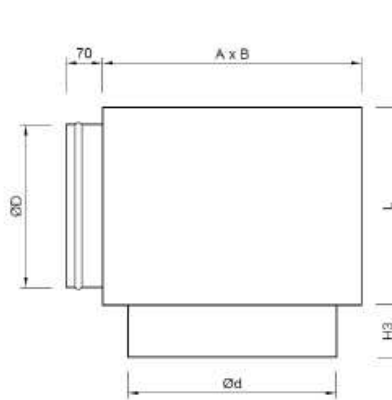
TYPE VDL - AVAILABLE SIZES (mm)				
NECK DIAMETER				
Ø315	Ø400	Ø500	Ø630	Ø800
X	X	X	X	X

**DIMENSIONS**

	ØW	ØW1	H1	H2	H3	Ød	A	B	L	ØD	ØW2
VDL-315	313	480	50	75	100	319	435	435	280	248	380
VDL-400	398	550	50	110	150	402	500	500	380	313	475
VDL-500	498	650	50	120	160	502	620	620	430	355	570
VDL-630	628	780	50	120	170	632	750	750	470	398	700
VDL-800	798	1050	135	200	250	802	1000	1000	570	498	880



VDL - 315- 400- 500- 630



**6 BLADES**

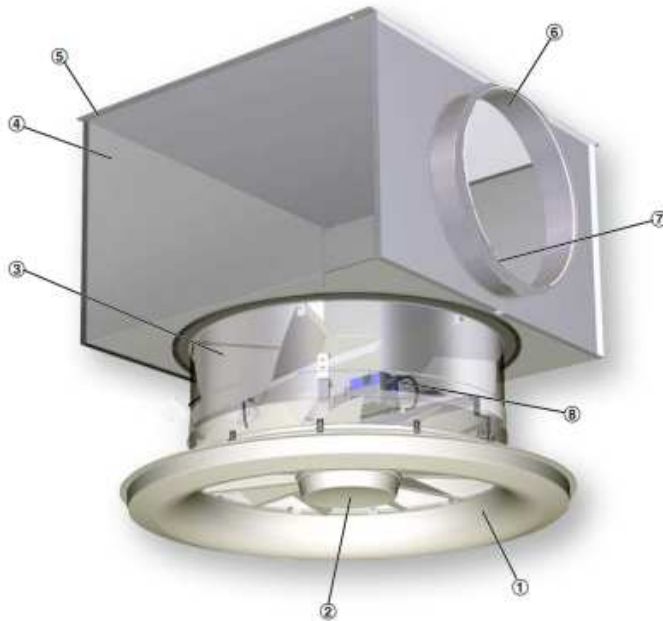


**12 BLADES**





Schematic illustration of the VDL, with plenum box for horizontal duct connection



- ① Diffuser face
- ② Decorative cap
- ③ Swirl unit with opposed blades (only with nominal sizes 630 and 800)
- ④ Plenum box

- ⑤ Suspension hole
- ⑥ Spigot Options
- ⑦ Lip seal
- ⑧ Actuator and cross bar

**Air patterns**



**Horizontal directional air discharge**

**Vertical air discharge**





TECHNICAL DATA

Nominal sizes	315, 400, 500, 630, 800 mm
Minimum volume flow rate	65 – 320 l/s or 234 – 1152 m <sup>3</sup> /h
Maximum volume flow rate, at L <sub>WA</sub> ≅ 50 dB(A)	170 – 1080 l/s or 612 – 3888 m <sup>3</sup> /h
Supply air to room air temperature difference	-12 to +15 K

VDL QUICK SELECTION TABLE

VDL	A <sub>eff</sub> (m <sup>2</sup> )	Flow Rate (m <sup>3</sup> /h)	250	375	500	625	750	875	1000	1500	2000	2500	3000	3500	4000	4500		
Ø315	0,023	V <sub>b</sub> (m/s)	0,9	1,3	1,8	2,2	2,7	3,1	3,6									
		P(Pa)	10	22	40	61	89	120	156									
		L <sub>s</sub> (m)	1,3	2,1	3,0	4,0	5,1	6,1	7,2									
		N[dB(A)]	24	31	40	47	54	59	69									
Ø400	0,031	V <sub>b</sub> (m/s)			1,1	1,4	1,7	1,9	2,2	3,3								
		P(Pa)			15	23	34	46	61	137								
		L <sub>s</sub> (m)			2,2	2,9	3,7	4,4	5,3	8,8								
		N[dB(A)]			22	27	32	36	40	54								
Ø500	0,049	V <sub>b</sub> (m/s)				0,9	1,1	1,2	1,4	2,1	2,8	3,5						
		P(Pa)				12	18	22	29	65	117	181						
		L <sub>s</sub> (m)				2,1	2,8	3,4	3,7	6,6	9,2	11,0						
		N[dB(A)]				22	25	32	30	49	56	65						
Ø630	0,078	V <sub>b</sub> (m/s)							0,9	1,3	1,8	2,2	2,7	3,1				
		P(Pa)							12	27	47	74	106	145				
		L <sub>s</sub> (m)							2,9	4,9	6,9	9,2	11,6	14,1				
		N[dB(A)]							23	34	42	48	54	58				
Ø800	0,111	V <sub>b</sub> (m/s)								0,8	1,1	1,4	1,7	1,9	2,2	2,5		
		P(Pa)								14	24	38	55	75	98	124		
		L <sub>s</sub> (m)								3,6	5,1	6,8	8,5	10,3	12,2	14,2		
		N[dB(A)]								26	34	41	47	53	58	63		

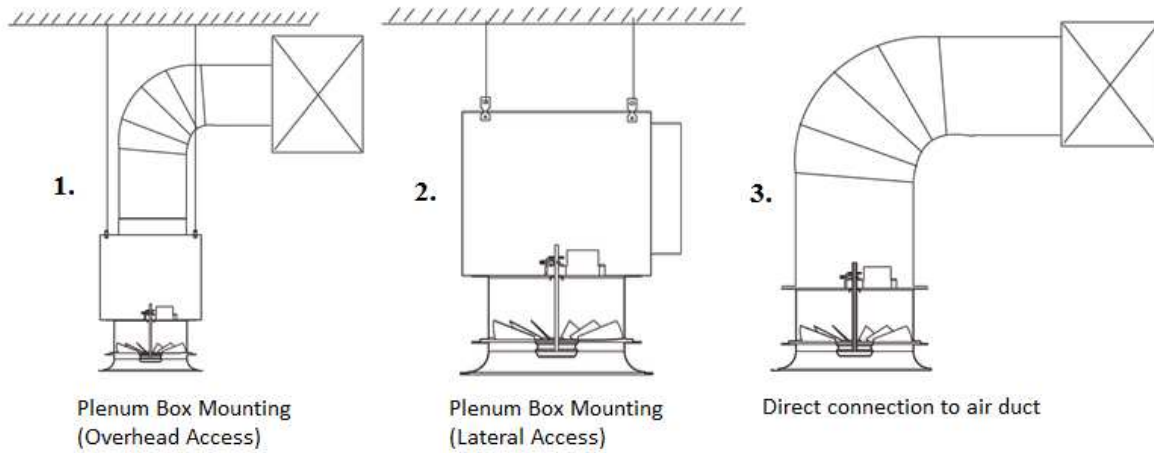
The firing distances in the table are calculated by calculating ΔT = + 10 K for heating. Comfort level is 1,80m. The arrival speed is 0.25 m / s.

- La(m) : Throw Distance
- N (dB) : Sound Level
- P(Pa) : Pressure Drop
- Vb(m/s) : Output Speed



**INSTALLATION:**

1. Plenum Box Mounting (Overhead Access)
2. Plenum Box Mounting (Lateral Access)
3. Direct Mounting to Channel



**Installation examples**

**Freely suspended installation**



**Installation in continuous ceilings**



**With plenum box**





**ORDER CODES**

VDL	00	RAL9010	SM	D 800mm
<b>VDL:</b> 12-6 blades (adjustable) <b>VDL-S :</b> 12 blades (Fixed)				<b>D: Neck Diameter</b>  <b>00: No Mounting</b> <b>SM: Screw Mounting</b>  <b>00: No coating</b> <b>EX: Eloxal Coating</b> <b>RAL----: Powder Coating</b>
<b>00: Without Plenum Box</b> <b>PL: With Plenum Box</b>				